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THE CANADIAN  
BEE JOURNAL

*"The Greatest Possible Good to the Greatest Possible Number."*

Vol. VIII, No. 15. BEETON, ONT., DEC. 1, 1892. WHOLE No. 326



C. A. FLEMING, OWEN SOUND, ONT.

## BIOGRAPHICAL.

## MR. C. A. FLEMING.

Mr. C. A. Fleming, principal of the Northern Business College, was born in the Township of Darby, adjoining the Town of Owen Sound, in the year 1857, of Scotch parentage. He spent his first years on the farm in the vicinity of Kilsyth, and became practically acquainted with all kinds of agricultural operations. His early education was obtained in the country school near his home, and his literary education at Owen Sound and Hamilton Collegiate Institutes, and the first start of a business education under S. G. Beatty, now of the Canada Publishing Company, Toronto, but then in the early days of the Ontario, Commercial College of Belleville. He received his professional training as a teacher at Owen Sound Model School and Toronto Normal School. He taught three years in the public and high schools of the Province. He was also accountant for a loan company, the Grange Trust (limited), for about two years. In 1881 he founded on a very small scale, and with very limited capital, the now famous institution over which he presides. His history since that time is the history of the Northern Business College. Day and night he has labored to advance this institution. Besides the management of the college, he has done his regular share of the teaching, and has found time to write six text books on commercial subjects. He has been a member of the Institute of Chartered Accountants almost since its incorporation. His services are much sought after by joint stock companies, etc., as auditor and expert accountant, on difficult problems in commercial affairs, so much so that in the college holidays his time is almost entirely taken up with such work. This brings him in touch with the business methods of leading financial manufacturing and insurance corporations, thus enabling him to keep his instructions to his students abreast with all the recent advances in commercial science. Mr. Fleming's ornamental penmanship has received the highest prizes and the only

medals ever given by the Provincial and industrial exhibitions for such work. He is a member of the Disciples' Church and a staunch advocate of temperance.

About four or five years ago he began to take an active interest in apiculture beginning with one colony to experiment on. His first investment in literature was his subscription to the CANADIAN BEE JOURNAL. "The A B C", and "Cook's Manual." He has continued to read up, to experiment and to increase his stock. Last winter he wintered twenty colonies, and this year he puts away thirty. He winters out doors, using chaff packing and is quite successful, never losing more than one colony in a winter. Though keeping bees, as a pastime, he takes delight in his Carniolan pets and takes great pleasure in all the work pertaining to his apiary. He increases generally by dividing, but sometimes by allowing them to swarm in the natural way.

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FOR THE CANADIAN BEE JOURNAL.

## WINTERING BEES IN LONG HIVES.

In reply to Mr. Nesbit as to how I winter my bees in my long hives, I would say that as the hive is only twenty-eight and a half inches, inside measurement, after confining the colony in the centre by two chaff division boards, there remain only about four inches of space at each end. This can be filled with straw or other convenient material which can be easily removed in the spring. I think this is a point in favor of long hives, viz.: they are so easily prepared for winter. A colony of bees should and do winter well in these hives.

G. A. DEADMAN.

Brussels, Ont.

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Be punctual and save your own time as well as that of others.

When you make everything else cheap you make yourself cheap.

A judicious combination pays better than trusting to one thing.

Good work depends not so much on the tools as on the workman.

Let the little ones help; they will be the happier and better for it.

The man who best understands his subject uses the fewest words.

## ORIGINAL CORRESPONDENCE.

FOR THE CANADIAN BEE JOURNAL.

## The Sunny South.

## AN INVITING FIELD FOR NORTHERN ENTERPRISE.

BY H. E. HILL.

Only those who have experienced that thrill of joy which takes possession of the devoted apiarist when, after many months of enforced separation from his beloved pets, and tedious days and weeks of care and anxiety for their welfare in this fair frozen land of ours, as he beholds the first bee of spring returning to her hive beneath the genial smile of an April sun with her first load of pollen, can realize the extreme joy and satisfaction which I felt upon liberating ten nuclei colonies at La Gloria, Cuba, on October 28th, 1886, and saw the first pollen-laden worker return to her hive. What a pleasure to think that no "chill October" winds, no November sleet and hail, no December frost and ice, no January blizzard or frozen February clouds, no blustering March will ever cast their gloomy shadows across their sunlit paths. What pleasure to see the little golden army marching to the alighting board and soar into the air, mingling their merry hum with the fragrance of the almost endless variety of flowers, fruit and spice trees, and know that henceforth perpetual summer is to be their lot.

Unobtruded by the blasts of winter, the glad hum goes merrily on where the mocking bird proclaims her joy, and the soft rustle of the palms, stirred by the gentle mountain breeze, seem to rise in gratitude to God for this their home, a land of never ending springtime.

While here, in the North, the beekeeper is spending a half of his life in anxious waiting, with his bees packed away in sawdust and idleness, more than one million five hundred thousand square miles of floral clad hill and valleys are yielding up their wealth of precious nectar to the winds.

Pause a moment and think of this vast tropical honey-producing area, including Cuba, St. Domingo, Puerto Rico, Mexico and the several Republics of Central

America, the greater portion of which is better adapted to the successful culture of the honey bee than the choicest locations of Michigan or New York.

It would seem that "fame and fortune," almost without limit, await the energetic Northerner possessing the five requisite factors,—capital, patience, a thorough knowledge of apiculture, and the requirements of that latitude, and an earnest determination to meet those requirements. With this stock in trade, success is inevitable.

Though decidedly primitive in their habits and modes of living, generally, I found the natives intelligent and very willing to abandon their antediluvian systems of beekeeping and adopt more modern appliances, when the advantages of the step were practically illustrated to them.

By placing a small model of a honey extractor, designed for use in extracting the honey from the combs cut from the native colmena, upon exhibition in a large buying house, together with a sample of honey extracted by the new method along with a fair sample of the common native product, I had many and frequent calls from native beekeepers; and, as a result, orders for thirty machines were taken in about two weeks' time, and numerous applications for supplies in general, especially hives, sections, smokers and *advice*. Some actually volunteered their services in exchange for instruction.

The introduction of a general line of modern appliances adapted to the requirements of the country could not fail to develop an immense and lucrative business; though I know of no opening in this vast area of the undeveloped South, along the line of apiculture, which offers such an opportunity for a large and remunerative business as does the production of beeswax in old Mexico, where all the churches and great cathedrals of the Republic are illuminated with this product of the "little busy bee," and the demand is far in excess of the supply.

With the advantages of a mild climate, an inexpensive adobe or mud hive, a

tropical sun to render the wax, a ready home market at good prices, an unlimited territory abounding in natural honey-producing forage, what is lacking? Why, only the combined efforts of two or three enterprising apiarists imbued with a deep and earnest love for their chosen profession that by virtue of its ennobling influence it justly merits, to place one hundred thousand little adobe mounds, each the happy home of a wax producing colony, upon the mountain sides and in the valleys of that "sunny land," where the forest of mesquit stretches out beyond the vision upon the plains, to meet the horizon and blend in the dim distance with the clouds of eternal spring.

Titusville, Pa., U.S.

FOR THE CANADIAN BEE JOURNAL.

#### SUGAR SYRUP INTO COMB HONEY.

I hope, Mr. Editor, that you will not allow the pages of the C. B. J. to contain any article favoring such a scheme as the editor of the *Review* proposes, viz.: to feed sugar syrup to get what he calls comb honey. Of all the unwise things that has either been done or said by the devotees of bee-keeping, I can conceive of none so foolish as this. I cannot understand how it is that Mr. Hutchinson does not see. The man must be crazy to suggest such a thing in the interest of beekeepers. I do not know what will be the outcome of such foolishness. The public must soon know it, and will not only object to paying such prices as he estimates the product will be sold for, but the outcome of it all will be that they will not buy any. Comb honey now does enjoy the reputation of being pure. Many have said to me, "I like honey in the comb because then I know it is pure." For an editor of a Bee Journal to advocate such a plan is outrageous. As Dadant says, "Hutchinson is doing the reverse of what he should do if he wants the support of table honey producers." The daily and weekly press will report such doings and then the "wily lie," will be as nothing compared to it. It would be wrong to sell this so-called honey for such, and it is not

likely that the public will pay three times the cost of it. He is short-sighted indeed who cannot see this. I think the sooner such a journal that advocates this ceases to exist, the better for all concerned.

G. A. DEADMAN.

Brussels, Ont.

FOR THE CANADIAN BEE JOURNAL.

#### BEECH TREE WOOLLY PLANT LOUSE.

SIR,—Please find enclosed some cotton-backed honey lice, that live on the beech trees in this vicinity in the autumn season.

I went to the woods a few days ago and found these fellows in millions on the bark of the branches of beech trees, and the bees were, or thought they were, having a harvest home dinner.

To give you some idea of how plentiful they were (I had my four-year-old boy with me), when we came under a large spreading beech tree the liquid was dripping so fast that the little boy became frightened. He said it was raining, and wanted to go home; then, to show him that it was not raining, I held my hand under a large bunch of them and disturbed them by blowing on them with my breath, when they covered my hand with the liquid.

They are strange looking creatures when observed through a glass. What is their name? Do they live on any other than beech trees?

I bought eleven colonies in old box hives last spring, which I transferred and ran for extracted honey. I extracted eighteen-hundred pounds from them, all clover and basswood honey, except one hundred and twenty pounds of fall honey.

This has not been a good season for honey here; but the above mentioned bees did not suffer from the cold, backward spring, as they were living in large buildings where they had been storing for some years before.

R. A. MORRISON.

#### REMARKS:

Upon receipt of Mr. Morrison's letter we immediately communicated its contents to Professor Cook of the Department of Zoology and Entomology of the Michigan

Agricultural College, who has kindly furnished us with the following reply, which we publish for the information of our correspondent and that of the general reader. It is fortunate that we have such a source of information open to us on occasions of this kind, and we are sure the general public will appreciate as highly and as thankfully as we do the very great kindness which marks the relations of the College and its faculty with outside inquirers, and the ability with which they so readily solve what appear to be difficult questions. A reference by ourselves to Professor Cook's very able work, *The Beekeepers' Guide*, would have enabled us to answer the questions of our correspondent, had it occurred to us, at the moment, to have applied ourselves to that Beekeepers' *vade mecum* for the necessary information. On page 333, we find these to be the characteristics of the louse as they are stated by Professor Cook: "The *Erisoma imbricator* (Fitch) works on the beech tree. Its abdomen is thickly covered with long wool, and it makes a comical show as it wags this up and down at the least disturbance. The leaves or trees attacked by this louse, as also those beneath the trees, are fairly gummed with a sweetish substance." Every beekeeper should have a copy of this work. The following is Professor Cook's reply:—

EDITOR CANADIAN BEE JOURNAL.

DEAR FRIENDS.—The lice which you style "cotton-back honey lice" are the common woolly beech lice, which I refer to in my *Beekeepers' Guide*, page 333, under the name *Erisoma imbricator*—Fitch. The more correct name now is *Schizoneura imbricator*. They pass the winter in the egg state. The small eggs can be seen on beech twigs by close examination. In the spring the queer lice with their long woolly covering come from these eggs. These

increase by agamic reproduction,—that is, there are no males. The young are born alive, or, as we say, are ovoviparous, instead of oviparous where eggs are laid. These increase very rapidly and by fall are very numerous on the branches. They swing their abdomens in a comical way as we disturb them. They seem very courteous, but always bow with the hind end of the body. They secrete much "honey dew" which is dark and rank. Fortunately the honey bee seldom takes it, only when it can get nothing else; so this sweet is rarely stored in our hives. The louse, like all plant lice, is very injurious to the trees. The nectar, too, runs down on the tree and attracts a fungus which also robs the tree of its vigor. Your name is not desirable, as we already have a good one: "the beech tree woolly plant louse," and besides there are many other similar lice which secrete honey dew; so we could not know which one you referred to unless you also used the word beech tree as a qualifier. The use of the sweet is evidently to attract ants and wasps, and thus protect the lice from birds and other enemies. It is very common to see wasps and ants about the lice, sipping the nectar; though, as I have already said, we seldom see bees about them. This honey-dew is like commercial glucose, too poor and unworthy to attract bees, unless it is this or nothing.

Yours truly,

A. J. COOK.

Agricultural College, Mich.,  
Nov., 23rd, '92.

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FOR THE CANADIAN BEE JOURNAL.  
CELLAR AND OUT-DOOR WINTER-  
ING, ETC.

MR. EDITOR,—Now is the time to begin to protect the bees for winter. See that all colonies left out are well protected from frost. Whatever the hives are protected with, let the same be dry and thoroughly screened from driving rain or snow. Absolute dryness is very important to be maintained all around the beehive as well as inside it. If frost ever gets entry of the hive, damp is sure to follow. For the best results, the packing must be sufficient

to keep all frost out. The hives should be so constructed as to allow the cover to be opened for the sunshine of fine winter and spring weather. The sunshine will serve to dry the packing over the cluster, warm up the bees generally, and help them to prepare for another cold snap. My first colony has yet to die under protection of a double-walled hive, with four inches of fine clover chaff at bottom and sides, six inches on top, and a southern aspect. Let no beekeeper who leaves his bees out in this latitude, neglect this plan, for good honey in connection with it will save the bees.

If bees are to be wintered in the cellar, let it be a dry one; if not perfectly dry, see that the temperature is kept at from forty-five to fifty degrees, Fahr.; otherwise you had better winter outside. Take your bees into the cellar about the middle of November, or on the first fine day after, when everything is dry. Don't allow any sleet or snow to accumulate and freeze upon the hives, and don't cellar the hives in that condition, or permit such accumulation to melt in the cellar and create damp there. One winter I left all my bees out until frost had accumulated inside the hives, and when I carried them into the cellar the frost melted and ran down the combs, so putting the bees in very bad shape for winter. Since then I take them in before frost enters the hive, and they do better. Many left their bees out late last fall, fearing that honey dew might cause them some trouble, and that late flights would help to shorten the period of confinement, thus placing their bees in very bad condition to stand the late rainy season. Their loss was consequently very great. Many carried their bees out early, —even in early March,—which was very hard upon bees already in bad condition, with the result that in this locality fully two-thirds died before the first of June. All honey dew was removed from my bees, and nothing but good food allowed, and taken into the cellar about the middle of November. As a result, I am happy to say that my winter loss only amounted to two, which had lost their queens, nor was there any dwindling. After nearly four months

in confinement, lacking only ten days, I was rewarded with four thousand pounds of honey; whilst my neighbors, who left their bees to feed on honey dew, leaving them out late in the fall, and taking them out too early in spring, have no honey whatever, but have to replace their loss in bees.

Take care of the bees.

Yours etc.

FRANK COVERDALE.

Walton, Ia.

FOR THE CANADIAN BEE JOURNAL.

### EXPERIMENTATION WITH FOUL BROOD.

The Ontario Agricultural and Experimental Union have for the past year been making an effort to solve some of the disputed questions in regard to foul brood. The society has been extremely fortunate in securing the services of Mr. John J. Mackenzie, analyst for the Ontario Bureau of Health, a gentleman who is eminently fitted for this work. He has studied in Germany and other countries along the very line required for this important work. Mr. Mackenzie has kindly given his labors free, and the Committee on Apiculture has given him every information in its power from the stand-point of beekeepers, and paid all other expenses in connection with the investigation. I dare not forestall the results of the work done, and which we intend to continue, but may say they are important, and they will surprise the majority of beekeepers throughout Canada — yes, throughout the world. The Ontario Agricultural and Experimental Union will meet at the Ontario Agricultural College, Guelph, on Dec. 22nd and 23rd next. The report on Apicultural Work, with the discussion, comes up on the 22nd. The meeting will be at a time when reduced holiday rates can be secured on all railroads. Prof. L. H. Bailey, an eminent horticulturist of Cornell University, Utica, N.Y., and Professor F. T. Shutt, chemist, Dominion Experimental Farm, and many others, will be at the meeting, making it an unusually interesting one. The meeting will be open to the public, and I hope we

shall have many beekeepers attending it. Any one wishing further particulars may address me, as I have the honor of being secretary of the organization.

R. F. HOLTERMANN, Brantford, Ont.

P.S.—I forgot to say that the agricultural experiments carried on by the Union this year numbered five thousand and eighty-eight. Come; you will have a profitable and enjoyable time. The College has, since the last meeting of the Union, added a convocation hall (to seat nine hundred), five greenhouses, a cheese factory, and creamery equipped for a short course of dairying, and a circular silo, etc.

FOR THE CANADIAN BEE JOURNAL.  
A Kind Contributor.

MR. EDITOR.—Your kind request that I will furnish something for the columns of the C. B. J. is before me, for which opportunity I thank you.

I have often felt like writing to our own periodical, but just as frequently have I been deterred by the consideration that my experience will not warrant me in an attempt to gain a place in your corps of contributors.

When I think of the many bright particular stars in your apiarian galaxy, I feel that in me it would be the acme of assurance to aspire to that honor. Nevertheless as you have extended an invitation I will endeavor to comply.

Although I have tried to be a beekeeper since 1866, I am somewhat of a Bourbon, because I have not learned very much about bees, and have forgotten nothing, when my toes have been intentionally trodden upon. Consequently, you must not expect from me anything either instructive or entertaining. "Such as I have give I unto thee."

A CANADIAN WEEKLY BEE JOURNAL.

A query which very frequently has arisen in my mind, is, why the American Bee Journal should have been allowed to substantiate its claim of being the only weekly bee-paper in existence.

If I remember correctly, the CANADIAN BEE JOURNAL was the first weekly publication in the interest of apiculture, which started into being on the continent to

which we belong; and why it should have been changed to a bi-monthly, thereby giving the *American Bee Journal* the opportunity of making the claim already spoken of, is "one of those things which no fellow can understand," as Lord Dundreary is credited with having said.

Now, as I have intimated, you have a large corps of excellent writers, who can doubtless furnish the "mental pabulum" necessary to produce a first-class weekly, equal to any and second to none.

Your subscription list is not confined to Canada, although her territory does exceed that of Uncle Sam by several hundred thousand square miles, and a determined effort put forth by each admirer of the CANADIAN BEE JOURNAL will produce the required result.

What say you, friend? Shall the CANADIAN BEE JOURNAL continue to rest quietly under the stigma of having surrendered its birthright?

Sincerely yours,

O. FITZALWYN WILKINS.

International Bridge,

Oct. 28, 1892.

REPLY:

We are exceedingly obliged to Mr. Wilkins, not only for his communication, but for the very important suggestion it contains. We should be very glad, indeed, if we could see our way clearly to a return to first principles, and the re-issue of the C. B. J. as a weekly journal. We do not know what the experience of the A. B. J. is, beyond the fact that we are happy to observe that it appears to be a prosperous venture. Our experience was that the weekly issue did not pay, and there was consequently no alternative left but to make the change. It counts largely in favor of economy of production, on the part of the A. B. J. that it is published within almost the centre of a circle whose periphery encloses a *clientelle* of some sixty millions of people. And although we enjoy a considerable circulation upon our own axis, as well as within the



periphery of the A.B.J., all the opportunities are more favorable to our contemporary than to ourselves. We can only say, in the meantime, that we are really glad to believe that the A. B. J. is so well able to sustain its weekly issue, and we wish it all the success it deserves.

We should be glad to hear from our correspondent again whenever he feels disposed to address us. Our columns are always at his service.

FOR THE CANADIAN BEE JOURNAL.

### GATHERINGS.

BY BEE.

Before I say anything of interest, I ask the excuse of those whose writings I have seen in other papers for having them published here; but these writings I consider to be of much value to those interested in the bee business; therefore, I send them. By the foregoing I do not wish the readers of this JOURNAL to think that all I contribute is the product of others, but simply when I see a good thing I send it along, too.

o o o

A subject greatly discussed at all meetings, and through all beekeepers, is the marketing of honey, and still it is a difficult problem to solve. I notice that there are two things that are kept in view and sought by beekeepers. First, a desire to keep up prices, and, second, to increase consumption. It will be seen that this cannot be done, because one works against the other. An increase of consumption tends to raise the price, but the most effectual way to increase consumption is to lower the price.

o o o

When honey was fifteen cents per pound, a small quantity was consumed. The high price stimulated production, so that the equilibrium was destroyed; then the opposite force came into play,—the price was lowered and the consumption increased. If the supply is still above the demand, the demand can be increased by still lowering the price, which will have the opposite effect of reducing the supply. In this way

supply and demand are equalized by inexorable law. Of course a great deal more honey can be consumed by opening up new markets, and putting it into localities where it is not produced; but this cannot be done except by lowering the price in order to induce men to take the trouble for the sake of the margin of profit.

o o o

A man told me that he bought honey (I think at ten cents) and took it to Winnipeg. After a good deal of trouble he succeeded in saving himself. Of course, he would not try it again. But if he had bought at eight cents he would have had a profit that would have induced another trial.

o o o

To most beekeepers the marketing of honey is the most disagreeable part of their work. A great deal is sold by peddling from house to house. If the seller is among his friends and acquaintances, he feels that it is sometimes bought, not because it is wanted, but because it is offered. This, to the writer at least, is not pleasant work. Up to a recent date most of the honey was produced in a small way. Bees were kept in connection with some other calling, and the honey found a market in the locality where it was produced, at a price ranging from fifteen to twenty-five cents per pound. The brimstone box-hive method was generally practised, and the honey was of a dark, inferior quality. With the introduction of improved methods, and beekeepers as specialists, it was found that honey could be produced in much larger quantities and of a finer quality. Those who first went into it made a very good thing of it, finding a ready market at what would now be regarded as high prices. The effect of this was competition, or, as before stated, an increase of supply. So that instead of a few hundreds of pounds being produced in a locality, say a school section, there may be several apiarists producing it by thousands of pounds. Of course the price comes down, but the locality can no longer take all the honey. The surplus is taken to town or city, and

there met by like surpluses from other localities. Grocers buy, but soon find producers peddling at prices as low as they have already given. This demoralizes the market, and further reductions must take place. Unlike other articles of food, such as butter and cheese, no one can tell what honey is really worth. The prices are not quoted, except in some of the large cities in the United States by some of their Bee Journals. The fact is, we have not in Canada a large enough honey market.

o o o

If beekeeping is to increase in the future as it has done in the past, prices must come down. Well, some will say, they must be kept up. My opinion is they must come down to such a figure as will tempt the purchase of it in quantities for daily use, or a foreign market must be found that will pay for production, and if one is found the industry will increase. Dealers will ship, as is now done with butter and cheese. But, if one cannot be found, beekeeping cannot expand to any great extent, for the reason that our limited market will be so glutted, and prices so low, that it will not pay except under the most favorable circumstances.

o o o

Some may think that I speak very discouragingly. That is not my intention. I believe in beekeeping. I believe that many will prosecute the business with benefit to themselves and the good of the country. What I wish to do is to correct erroneous ideas. This honey business cannot be settled by simply talking and writing. We must meet the consumer with a good article, that, after having tried, he feels willing to pay for. I wish to correct the idea that honey can be profitably produced by simply having bees. Some localities will give much more honey than others, and then a great deal depends upon management, so that we need not wonder that so many, from one cause or another, lose money by trying to keep bees.

o o o

One of the difficulties as regards market-

ing at the present time, is the prevailing ignorance in reference to quality. This, however, is being corrected. Consumers are finding out that there is a difference in honey as well as butter. As this difference becomes better understood the less difficulty will there be in marketing a fine article. As an evidence of this, I know a beekeeper who has been supplying several gentlemen in a neighboring city for the past two or three years. One of these gentlemen was spending the evening with a friend, when the subject of honey came up. His friend said, "I have never seen good honey here." The reply was, "I think I have some good at home; I will send you a sample." Next day the sample was sent. This resulted in the lady friend making inquiry where that honey could be obtained. She said she had never tasted any as good. I mention this to convince beekeepers that if they are going to sell their honey at paying prices, they must work in the direction of quality instead of quantity. Why is it that comb honey will sell for twice the price of extracted? And why is it of finer quality? Because it has gone through the whole process of honey making. It is generally supposed that bees gather honey. This is not strictly correct; bees gather nectar, and from this nectar honey is produced; but the change from nectar to honey must be left to the bees,—man cannot properly do it. Here is where the great mistake is made by many beekeepers. If they are producing comb honey they must leave it with the bees till the process of honey making is finished; while if they are producing extracted, they take it from the bees in a thin, limpid state, part honey and part nectar. The result is inferior quality, unsatisfactory to the consumer and an injury to the honey market. Extracted honey should be as nearly as possible the same as comb honey, with the exception that it is extracted from the honey comb. If this were attended to by all beekeepers, I question if we could produce more than would be required at moderately low prices. Fine quality and low prices will make a market for large quantities.

FOR THE CANADIAN BEE JOURNAL.

### QUEBEC MATTERS.

Recently, in looking over some of the last issues of the JOURNAL, which want of time had prevented me from doing before, I noticed what you had said on page 212, Oct. 1st No., in reference to the poor honey exhibit at the Sherbrooke exhibition. It was not very large; that is true. But then their prizes were only \$2 each on comb and extracted honey,—not enough to tempt a beekeeper to make an exhibit unless he expected to derive a benefit aside from the premiums offered. No doubt a vigorous beekeepers' association, by agitating the matter and properly representing things to the directors of these agricultural societies, might induce them to do much better.

But Ontario beekeepers must not think we are altogether behind the times in the matter of honey exhibits. The exhibits of honey, both in quantity and quality, and also of apiarian supplies at the Montreal Provincial Exhibition this year—and last, too—was pronounced by good judges to have been nearly equal to that of Toronto.

Two beekeepers' associations have been formed in this province. The French beekeepers took the initiative by forming a society about 1878. Mr. J. B. Lamontagne, at that time of Montreal, was its leading promoter. He afterwards left the province, and the association melted away. This gentleman was the author of a hand book on apiculture (French), and he did much to advance the interest of modern beekeeping among his countrymen.

A few years later the Eastern Townships Beekeepers' Association was formed. This prospered fairly well for a time, but finally died, too, but not before it had secured through its president, Mr. E. E. Spencer, M.P.P., a grant of \$200 per year from the Provincial Legislature which, however, was never drawn.

Beekeeping, in the modern sense of the word, has made vast strides in this province during the few years just passed, and we are hoping to soon see a representative beekeepers' association formed here on

larger and broader lines than the former ones, and embracing the whole province. I expect to have something further to say about this matter in a future issue.

F. W. JONES.

Bedford, Que., Nov. 17th, 1892.

FOR THE CANADIAN BEE JOURNAL.

### QUESTIONS AND ANSWERS.

DEAR MR. EDITOR,—Some time ago I received a copy of the CANADIAN BEE JOURNAL. I now enclose you \$1 for subscription. I also received during the year a number of sample copies of American publications, but have concluded to patronize home production. I started last July with one colony of Italian bees, received from a Nova Scotia apiary, and in one of the Jones combination hives with two supers and sections full of comb foundation. The venture has been entirely unsatisfactory thus far; but, as I am determined to give the bees a fair trial, I beg your co-operation and advice. I believe I am the pioneer in this country, and am anxious to succeed. The following are a few of my difficulties:—First, I cannot get the bees to work in the sections except to nibble away a part of the foundation, which, I presume, was used in building brood chambers below. On examining the frames, I found them only partly (a very small percentage) capped, and a large quantity of the comb with no honey in it at all. I procured Prof. Cook's Manual, and he recommends for winter preparations removal of two or three frames to provide a space for the bees to cluster and in which to place the feeder, and here I am considerably nonplussed,—how to put a feeder in the hive and what kind of a feeder to use. I cannot see where the room is for such when the cover comes hard down on the frames. I moved the bees into my house cellar yesterday, the 8th inst., temperature 45°. I handled them very carefully, but they were considerably agitated and a number came out and clustered on the outside of the hive; but, as far as I can see, with very few exceptions have all returned. Do you think the

openings (entrances) at the bottom of the hive is sufficient ventilation? I have ventilators in my cellar which are open all winter, only shutting them on very cold days. Our climate is exceedingly changeable, the coldest day not exceeding 15° below zero. Do you think bees could be safely wintered outside in chaff hives? Often in midwinter we have days 50° and 60° temperature, Fahrenheit. Should I begin at once to feed bees, and how can I do it best? I have two frames out. Had I better return them? Does it ever happen that after the piping of the queen, as described by Prof. Cook, that no swarm issues? I distinctly heard this at the appointed time, but no swarm issued; still they may have stolen a march; if so, my colony is very weak in numbers to-day. If I get through the winter successfully, I will make another attempt in the spring. My bees are always building combs between the frames, fastening them together. Are these called "brace combs?"

By answering the foregoing questions, and giving me all the information you can in the matter, you will exceedingly oblige.

ONE IN TROUBLE ABOUT BEES.

Lochlevin, Cape Breton.

REPLY:

DEAR SIR,—In answer to your inquiries, we would state as follows:—The reason why you could not get your bees to go into the sections, we presume, was on account of the scarcity of honey in your locality. During this season some bees have almost starved, while others did fairly well. When there is no honey coming in, bees are liable to nibble down the foundation. They may use some of it in building or capping the combs below. We have frequently known the bees to gnaw down the comb foundation entirely, or nibble it full of holes. If a flow of honey commenced, so that they would have sufficient to fill the brood chamber and store in the supers, they would immediately repair the holes, draw

out the foundation and fill it with honey as rapidly as possible. In reference to feeders, there are a large number of different kinds now in use. Mr. W. D. Soper, of Jackson, Mich., has a very valuable one. Also the feeder made by the late D. A. Jones Co., which covers the hive, and is not patented, so that any supply dealer can manufacture it. We rather favor the latter. It is now getting very late to feed liquid food.

The jar of putting the bees away frequently causes them to cluster outside the entrance, but, as you say, the most of them will return after they get quieted down, and the loss of a few from each hive may not affect them. It is a very common thing during the winter to find that a large number of bees have escaped from the hive and died on the floor of the depository.

Most certainly they can be safely wintered outside in chaff hives, and for inexperienced beekeepers we rather favor out-door wintering. It has this advantage, that you can pack them early in the season. Thus, you do not have to guess the best time to set them out in the spring, as they can fly out at leisure, the weather being suitable. When setting out bees from winter quarters it is sometimes accompanied with considerable risk should unfavorable weather set in. If there is honey in the frames, you had better return them.

Bees usually swarm in from one to two days after the piping of the queen commences, and sometimes on the same day; but I have known a colony to have bees piping and not swarm. It usually occurred in this way:—The old queen died just before the swarming season or during the summer, and a large number of queen cells would be started. If the colony were strong they would sometimes pro-

tect the queens in their cells while perhaps one had escaped, and in unfavorable weather we have known them to continue piping for several days, and even then not swarm. But when a swarm issues in the regular way, when the piping is heard in the hive about the time the second swarm is expected, you may watch for a swarm very soon after you hear the piping.

The little braces that they build between the combs is a very common occurrence. They do not build them so frequently when the combs are kept a little farther apart. But as they are easily removed, they will do no harm.

We like the tone of your letter and believe it is just such men as yourself who will succeed at bee-keeping. We would advise you, however, if there is a scarcity of honey plants in your section, that you procure some seed which will produce honey plants, and sow it along the roadside, in vacant lots, in fence corners, or any place in which you think it will grow. In the course of two seasons you will notice a vast difference.

We hope to hear from you frequently, and wish you every success in your new undertaking.

FOR THE CANADIAN BEE JOURNAL.

#### NEW BEEKEEPING PATENTS,

The following is the list of patents issued to Nov. 9th, 1892, from the United States Patent Office, Washington, D. C. :—

Beehive, to John W. Crisinger, Nevinville, Ia., U.S.

This hive consists of a storage compartment consisting of a rectangular casing having inwardly extending side flanges and end flanges extending inwardly from the casing. A series of trays of a length less than the length of the interior of the casing and greater than the distance between the end flanges, rests on the trays, a series of right-angled openings in the upper edges of the trays, hooked bales for fitting in the said openings, and a stop having a lateral projection on its lower end

of a width equal to the width of the space between the trays and casing, and of a length equal to the width of a tray.

Centrifugal Honey Extractor, Florence Williams, Seneca, Wis.

A comb-holding frame comprising two or more bars at its lower end, a ring uniting the same upright bars and a ring uniting them at their upper ends, and comb holders pivoted to the said frame; midway between the upright bars, a gear segment carried by the pivot of each holder at its upper end, a ring having a rack for each segment, and a shaft carrying said ring and journalled in said frame at its lower end.

### MISCELLANY.

#### Cellar Wintering.

Not every cellar is a safe repository for bees; it should be warm and well ventilated, the thermometer indicating between forty and forty-five degrees. Some beekeepers claim that bee cellars do not need ventilation. Why not? Bees breathe and throw off moisture and impurities, the same as man. The first bee-cellar I ever saw, was at the foot of the Green Mountains in Vermont, while visiting an aged bee-keeper residing there. In answer to my query, as to how he kept his hives so new and fresh, he said, "my bees are only out of doors when honey is to be gathered. I keep them in the cellar until Summer returns. When the honey season is past I return them to the cellar." He showed me where he kept his hives saying: "this cellar has been built one hundred years. It is walled with stone and does not freeze. That hole there above the wall, which looks like a square stove pipe, is a ventilator which I can open and close at pleasure. This box is for holding ice, if the bees get too warm, but I've never used it. They always winter well, and appear stronger in spring than in autumn. Some of my neighbors set their bees out during a warm time in March, and when I took my bees out, *theirs* were all dead."—As I had lost in previous winter and spring 95 colonies of bees, I was converted to cellar wintering, after seeing how this man wintered without loss, and saw his bees filling up the honey.—*Orange Judd Farmer.*

#### Improved Hives.

Perhaps the latest invention in the direction of a hive is the one in which the brood chamber can be divided in two, horizontally; that is, it consists of two storeys, half the depth of the Langstock frame, and the brood chamber can, therefore, be

manipulated to a greater extent than formerly. The hive, although for some years on the market, is meeting with but poor headway. True, it has its warm advocates, but they are few. The advantages to men of experience are fewer than the disadvantages. To those not having experience, no one need hesitate to condemn such a hive; the chances for blundering are too great, and the box hive would be far better. The eight-frame Langstock hive—which is not patented—is used more generally throughout America than any other; in fact, it would be safe to estimate that eighty out of one hundred are of this design. Other hives of about the same capacity are probably just as good, as far as results in honey production go, but supplies for this hive are more easily purchased, and when the time comes that these hives are to be sold (that time, however distant, is almost sure to come) they can be sold more readily in this hive than any other.

An old and successful beekeeper, who has tried many hives, and who has a hive of his own design in the majority, stated to me, "After all my experimentation, I confess with regret that Father Langstock struck it just about right when he made the first movable frame hive." Above all, do not get up an odd sized frame of your own if you continue in the business. You will surely regret it. Take, at least, some hive that is somewhat generally used. The chaff hive may be sufficient protection for winter; but a severe winter may come when it is not. A single-walled hive is cheaper, and if outside wintering is desired they can be put in large boxes and packing placed between.—R. F. HOLTERMANN in the *Canadian Horticulturist*.

### The Science of Beekeeping.

POLLEN GATHERING: WITH SOME NEW DISCOVERIES ON THE FORMATION OF THE POLLEN PELLETS.

*Continued from page 234, C.B.J., Nov. 1, '92.*

Another common error in several standard works is to regard the brushes, so called, which the bee carries on the inner part of its hinder legs, as appendages used to gather pollen. Take as example Prof. Cook's *Beekeepers' Guide* (13th ed., pp. 126, 129), where he says:—"Opposite the pollen cavity of the first tarsus, or on the inside, are about eleven rows of stiff hairs. They are of a golden color and very beautiful. These may be called the pollen combs, for it is they that gather, for the most part, the pollen from the gathering-hairs of legs and body, and convey it to and pack it in the pollen baskets."

Now, the hind legs of the bee play positively no part whatever in gathering pollen. That fact alone disposes of the question; but nature has especially ordained that the brushes shall not gather pollen. I maintain that the brushes or combs, so called, are not brushes at all, but a special apparatus adapted to a special purpose, and must be kept clean and free from outside substances of any kind excepting the specially prepared substance which is conveyed to them. In fact, the so-called brushes cannot even be used by the bees to remove obstructive pollen grains from the under part of the body, the bees doing this with the inner part of the tibia.

In the same paragraph the author speaks of "the gathering-hairs of legs and body." It is perfectly misleading to say of these hairs that they "gather," because, if we except the hairs along the side and near the extremities of the centre and of the fore legs, which assist these limbs to gather pollen, the only use to which the hairs are applied is to receive or retain pollen.

The most interesting part of the whole subject, however, is the manner in which the pellets are formed, and, in order to show how our best-known authorities have gone wrong, I quote a passage from our very much esteemed friend, A. I. Root, editor of *Gleanings*. In the *A B C of Bee Culture*, edition 1887, p. 183, he says:—"Well, between the pollen-gathering legs and pollen-basket legs are another pair. These play a very important part in getting the pollen into the pollen baskets. With the tongue, fore leg and middle leg the bee pads up the pollen and honey until there is quite a wad of it, and then, with a very pretty sleight-of-hand, he carries this little cake, scarcely so large as the head of a small pin, between the middle and fore leg, back to the pollen basket. When in place, it is firmly pressed into the basket, and then neatly patted down with the middle leg, much as a dexterous butter-woman gives her neat rolls the finishing taps. This motion seems to be a sort of automatic movement, for the bee is the while intently engaged with tongue and fore feet in gathering more pollen from the flowers. The operation may be witnessed easily by taking on your finger a bee that is gathering propolis from some old quilt or hive. As he picks and pulls off bits of wax with his mandibles he will convey them back to the pollen baskets much more leisurely while he stands still, and you can easily follow the whole proceeding."

Who would trouble to solve the question of the formation of the pollen pellets after the researches of such an able observer, and who would question the accuracy of

his deductions after reading in his work what appears such a natural solution of the problem? What more natural, one might say, than that the bee should carry the pollen with the centre legs to the pollen baskets in the same way it carries there the propolis at another time?

Yet what Mr. Root has seen, and what nearly all observers up to the present day see with him, is but a delusion, a mental picture, not an actual fact, because the bee never carries prepared pollen from the centre legs to the pollen baskets.

It is very interesting for one who, like the writer, has paid close attention to the subject, over an extended period, to notice what a stumbling-block the solution of the formation of the pollen pellets has proved to every author of works on the honey-bee.

Mr. F. R. Cheshire says, in his work, *Bees and Beekeeping* (vol. i. pp. 131, 132):—"So soon as bees have loaded these combs they do not return to the hive, but transfer the pollen to the hollow side of the tibia, seen at *ti*, A. This cavity, corbicular or pollen basket, is smooth and hairless, except at the edges, whence spring long, slender, curved spines, two sets following the line of the bottom and sides of the basket, while a third bends over its front. The concavity fits it to contain pollen, while the marginal hairs greatly increase its possible load, like the sloping stakes which the farmer places round the sides of his waggon when he desires to carry loose hay, the set bent over accomplishing the purpose of the cords by which he saves his property from being lost on the road. But a difficulty arises. How can the pollen be transferred from the metatarsal comb to the basket above? Easily; for it is the left metatarsus that charges the right basket, and *vice versa*. The legs are crossed, and the metatarsus naturally scrapes its comb face on the upper edge of the opposite tibia, in that direction from the base of the combs towards their tip. These upper hairs standing over the W p B, or close to *ti* A (which are opposite sides of the same joint), are nearly straight, and pass between the comb teeth. The pollen, as removed, is caught by the bent-over hairs and secured. Each scrape adds to the mass, until the face of the joint is more than covered, and the hairs just embrace the pellet, as we see it in cross-section at G. The worker now lies homewards, and the spike, as a crowbar, does its work." (The letters in the text quoted refer to the figures given in the plates in Mr. Cheshire's book.)

"Easily," says Mr. Cheshire, seemingly quite unconscious that he was dealing with a question which had puzzled all previous

authors before himself to unravel and which might have remained still unsettled were it not for my own special discovery, which supplies a veritable missing link in our present knowledge of the honey-bee. Mr. Cheshire attempts to overcome the difficulty which confronts him by throwing out a mere conjecture. But this conjecture is wrong, from the very fact that one of the peculiarities of the bee is that it never crosses its hinder legs! When forming the pellets they always work parallel to each other; at death only can they become crossed and distorted. Mr. Cheshire was, therefore, invoking a perfect impossibility!

If the prepared pollen is not conveyed to the pollen baskets by the centre legs, nor by the sides, by the bee crossing its hind ones, how does it get there? That is what will be explained by the system discovered by the writer, as follows:—

#### THE SYSTEM OF POLLEN GATHERING AND THE FORMATION OF THE POLLEN PELLETS.

It will be necessary, in explaining the system, to use two new terms, which I will at once proceed to define. (a) The pollen brushes or combs, so called, on the inner part of the hinder legs, will be called the "compressors," which, as I shall show, is their proper appellation in conformity with the use to which they are applied. (b) The curry-comb or pecten and velum, near the end of the inner part of the joint in each of the fore legs, and previously termed antennæ cleaners, will be designated "tongue-extenders," seeing that they are used to extend the tongue when the bee desires to draw a fresh supply of saliva, and so used every now and then during the formation of the pellets.

The above explanations, together with the information conveyed, while refuting erroneous ideas on the subject, will enable the reader to understand the rules referred to, which, for easy reference, will be numbered, so as to lead the reader on point by point and section by section.

#### RULES.

1. All pollen gathered by the honey-bee receives an admixture of saliva outside the hive, before being formed into pellets.
2. In gathering pollen the bee uses only the tongue, the mandibles, the fore legs and the centre legs.
3. The mouth of the bee is a receptacle into which all pollen gathered must pass to undergo a certain process and to receive its charge of saliva.
4. The tongue is the prime organ for gathering pollen, besides being the only organ that transfers the pollen to the mouth for manipulation, and from the

month after it has undergone the necessary process therein.

5. The mandibles are auxiliaries of the tongue in gathering pollen, the tongue transferring it to the mouth for manipulation.

6. The bee has an auxiliary pollen store, or dry-pollen receptacle under the thorax, known and used by the bee as such, and all dry pollen placed there is as secure as in a closed basket.

7. The fore and centre legs are also auxiliaries, the pollen gathered by them being transferred to the dry-pollen store mentioned in rule 6.

8. The tongue removes the dry pollen from the auxiliary store according to requirements, and transfers it to the mouth for manipulation.

9. The process which the pollen undergoes in the mouth of the bee, with the help of the mandibles, appears to be the breaking or disintegration of some of the pollen grains, the possible elimination of some of the pollen husks, and giving the pollen a charge of saliva. It may also undergo some other process, because it remains in the mouth a comparatively long time.

10. The prepared pollen, as removed from the mouth by the tongue, is taken by the ends of the fore legs, which transfer it in turn to those of the centre legs, and these latter place the double handful thus held between the compressors at their furthest and lowest corner.

11. The work of the compressors appears to be to compress the pollen and expel the minute air-bubbles which gather while the prepared pollen is being mixed with the frothy saliva of the bee. Also, perhaps, to destroy minute insects or their eggs which the pollen may contain, and to pass the pollen up through the pollen passage.

12. The "pollen passage" above referred to is situated at the top of the compressors, and forms the opening of the joint between the planta or metatarsus and tibia; that passage, open on one side and joined by the articulation of the joint on the other, is similar in action to the mouth of a carpenter's plane, allowing the prepared pollen to pass from the face of the compressors to the pollen-basket cavities of the legs; just as when planing wood the shavings pass from one side to the other through the mouth of the plane; the pellets are thus formed at the commencement from their lowest side, and adding fresh prepared pollen from their under side between the pellets and the face of the pollen baskets.

The "pollen passage" described in rule 12 is that which the writer has discovered and already alluded to as supplying a most

indispensable missing link in our present knowledge of the honey-bee; and it has enabled him to determine and locate every movement performed by the bee in gathering pollen and in forming the pellets, as well as to frame the present indispensable system, the want of which has been the cause of so much error in the past.

13. The comb or pecten, which forms the extremity or lower end of the tibia, prevents the prepared pollen as it is forced up the passage by the action of the combined compressors, from running up the inner part of the leg or tibia, as sometimes happens with bees which have done much work and have some of the teeth or bristles of the comb broken or missing. In this case, it is brought below the comb again by the bee drawing up its leg against the body. This comb, therefore, we shall call the "pollen-preventer comb." It serves almost the same purpose as, and is somewhat analagous to, the iron which serves to guide the shavings up in the carpenter's plane.

(To be continued.)

#### Fire Heat.

Is this necessary, in a cellar where bees are kept? That depends upon whether it can be kept warm enough without it. The temperature must not be allowed to go below 40°. Dr. Miller practises keeping a fire, and last winter was experimenting to see if they could get along without it and attributes his great loss to the want of the heat. He uses small cylinder stoves and keeps a slow fire with anthracite coal. The bees in the Vermont cellar did not need any fire, but Dr. Miller's may. There is a difference in cellars, and the rooms above. The piercing prairie winds may force an entrance, while the still cold air at the foot of a mountain may not. So all who own bees must depend upon their own observation and judgment, as to what is the best plan for them individually to follow in wintering bees.—*Orange Judd Farmer.*

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For one new subscriber with \$1., a Porter or Hastings Bee Escape. For three new subscribers with \$3, a Jones Smoker. For four new subscribers with \$4., a copy of "Cook's Manual."

Money should be simply a medium of exchange and not an article of speculation.

Experiment on a small scale, if you do not wish to lose in a large way.



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# Canadian Bee Journal,

ISSUED 1ST AND 15TH OF EACH MONTH.

D. A. JONES. - - EDITOR.

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CANADIAN BEE JOURNAL.

## EDITORIAL.

We wonder how many are beginning to make calculations for another season.

No more combs should be left in the hive than is necessary to contain the food required for wintering the colony.

It is not too late to take a retrospective glance at the work we did last year and, to lay our plans for necessary improvements for next season.

Good white honey is likely to be scarce before another season, and those who have a first-class article in stock, will, we are quite sure, find a satisfactory market for it.

All hives should be carefully protected from the weather. The entrance of rain into the hives at this season of the year is very injurious.

Mr. R. F. Whiteside writes us:—  
"I did not think an advertisement

in the C.B.J. would have brought me so many cash customers for my honey and queens. You may now discontinue it.

Empty or partially empty combs, not covered by bees, are liable to absorb moisture, and the condensed water in the cells not only injures the comb, but injures the bees as well, by keeping the cluster damp.

A communication from the respected Secretary of the Ontario Beekeepers' Association informs us that the next annual meeting of the Association will be held in Walkerton on the 10th, 11th and 12th of January, 1893. The programme for this important event is being prepared by Mr. Couse, and will be ready for distribution as early as possible.

There are some parties in Toronto who are trying experiments with their dark honey for use in the manufacture of mead or metheglin. If their efforts should prove successful, they expect to find a market for nearly all the dark honey. We would advise our friends in other localities, who can find a market for it, to try if they can make a really good article, and so realize more money than they could by selling it at the low price it is now subject to.

We have received from Friend Hutchinson, of *The Review*, quite a novelty in the shape of an illustrated little circular, topped, edged and bottomed with vignettes of "The men who make the *Review*." The circular is a miniature review itself of the labors of our esteemed contemporary in the field of apiculture, and states pretty accurately what the *Review* has done in the past, and what its programme will be for the future. We congratulate

the *Review* upon its enterprise, and wish it every success in its valuable work.

o o o

A correspondent asks us if he cannot introduce queens successfully at this season of the year. If the colony is queenless, the queen may be caged on a cold morning over the cluster, but down close enough to prevent her from being chilled. Then, in the evening, without disturbing the cluster, if you can allow the queen to pass down among the bees while they are clustered tightly in their winter quarters, we think there will be very little danger of her being destroyed. But we think, at the same time, that queenless colonies may be doubled up with weaker ones quite satisfactorily without going to the expense of re-queening them so late in the season.

o o o

We wonder how many beekeepers have neglected to feed their bees for winter. If it is not already done, not one moment should be lost. The first warm day should be availed of for the work; indeed, we should be hardly disposed to wait long for a warm day, but rather proceed to examine the colonies and equalize the stores at once. If some have too much, remove the superfluous combs and give them to those that have not enough. If you intend to place your bees in winter quarters do so. If they are to be packed with chaff, do not wait till next year to do it. Care in packing with chaff or placing them in winter quarters will repay the effort.

o o o

Bees should not be fed with liquid food while in their winter quarters. We once knew an instance in which bees wintered fairly upon liquid food in the feeder placed over the combs. They clustered just under the feeder.

The heat from the bees apparently kept the food from granulating in the feeder. They passed up the centre of the feeder through the opening, then over the various partitions, and seemed to take the feed out very slowly, but quite enough for their purpose. The feeders used in this instance held between fifteen and twenty pounds of feed. On warm days they seemed to take more food out of the feeder than they required for immediate use, placing it down in the combs at the lower part of the cluster, as two-thirds of the bees were in the feeder and above the combs. As soon as warm weather came in the spring they moved down between the combs, and carried down the balance of the feed from the feeder and commenced brood rearing.

o o o

We have received from Mr. Geo. E. Hilton, secretary of the Michigan State Beekeepers' Association, a copy of the programme of its twenty-seventh annual convention, to be held in the State Senate Chamber, at Lansing, on the 13th and 14th proximo. The annual address will be delivered by the president, R. S. Taylor, of Lapeer, at the first afternoon session, papers being also read by H. D. Cutting, of Tecumseh, on "Adulteration," and by Mr. Hutchinson, of *The Review*, on "Shall we Feed Cane Sugar Syrup for Honey." The evening session will be principally occupied by Prof. Cook, of the State Agricultural College, and by Messrs. West, of Flint, and Boyden, the former with a paper on "Experiments in Beekeeping," and the two latter on "Has the Bee Escape come to Stay?" On the 14th a paper on "Few Bees and Much Attention, vs. Many Bees and Little Attention," will be read by Byron L. Walker, of Ewart, and one by T. F. Bingham, of Abronia, "Shall we